

**REMARKS/ARGUMENTS**

Applicants respectfully request the examiner to reconsider his rejection for the reasons set forth hereinbelow.

In responding to Applicants' arguments presented in the Request for Reconsideration filed June 15, 2006, the examiner remarks as follows with regard to the rejection under 35 U.S.C. 103 over Bengston in view of Tomlinson.

"Both applicant's remarks and the technical abstract provided by the applicant disclose that carcinogenic nitrosamines are products of tertiary amines and nitrous acid. However, neither Bengston nor Tomlinson uses nitrous acid or nitrite, which would produce nitrous acid in an aqueous solution, in their coating solutions. Bengston and Tomlinson only teach the use of nitrate or nitric acid in their coating solutions. Therefore, the formation of carcinogenic nitrosamines should not have been a problem in the coating process of Bengston in view of Tomlinson. Therefore, applicant's argument is not persuasive."

Applicants attach hereto a further abstract of a technical paper entitled THE CONDITIONS OF CHEMICAL CHANGE BETWEEN NITRIC ACID AND CERTAIN METALS. As can be seen from the attached abstract, it is well established that nitrous acid is a product of reduction when metals dissolve in nitric acid. Accordingly, nitrous acid would be present as a product of reduction and this would lead to the carcinogenic nitrosamines in Applicants' paper of June 15, 2006. Accordingly, contrary to the examiner's position, the formation of carcinogenic nitrosamines is a problem in a coating process resulting from the combination of Bengston and Tomlinson.

With regard to the examiner's second grounds of rejection, the examiner sets forth the following in response to Applicants' arguments:

"Regarding applicant further arguments based on the specificity of Tomlinson's conversion coating solution, the examiner does not find applicant's

arguments persuasive. Both Matsushima and Tomlinson's coating solutions comprises phosphate, fluoride and organophosphonic acid. Matsushima's coating solution further comprises titanium and Tomlinson's coating solution further comprises zirconium. Titanium and zirconium have very similar properties since they belong to the same metal group on the periodic table and are often used together or interchangeably in combination with fluoride to provide source of complex fluoride in a conversion coating solution. In addition, Tomlinson teaches that this type of coating solution can be applied to both aluminum and magnesium surfaces. Therefore, one of ordinary skill in the art would have found it obvious that the coating solutions of Matsushima and Tomlinson are very similar and would have applied the coating solution of Matsushima in view of Oppen to a magnesium surface with expected success in view of the teachings of Tomlinson."

Claim 7 sets forth "consisting essentially of" language. The solution employed in the process of the present invention as defined in claim 7 does not contain any titanium or zirconium. Titanium and zirconium are principle ingredients in the coatings of the Tomlinson reference (see column 1, lines 1-5). The second reference to Matsushima further teaches on column 5 line 24 through column 6 line 9 that both titanium and fluoride are necessary for the formation of satisfactory coatings. The combination of Tomlinson and Matsushima, when fairly read, cannot be said to teach the solution of the process of the present invention. The examiner's assertion of interchangeability does not come from the prior art as the prior art (Matsushima) requires titanium and fluoride in order to produce a satisfactory coating. The examiner's argument for interchangeability is therefore indirect opposition to the teachings of the prior art and can only be arrived at by the examiner as a result of hindsight reconstruction.

In light of the foregoing, it is submitted that the claims as pending patentably define over the art of record and an early

indication of same is respectfully requested.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

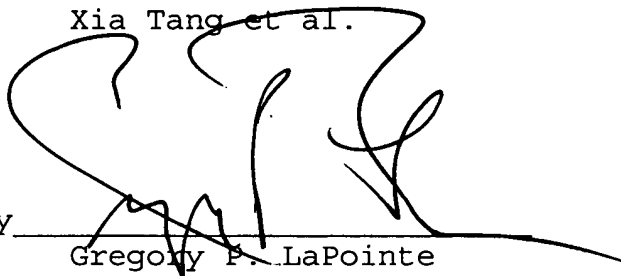
It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

If any fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,

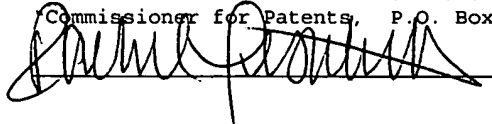
Xia Tang et al.

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Date: September 26, 2006

I, Rachel Piscitelli, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on September 26, 2006.



**The Conditions of Chemical Change between Nitric Acid and Certain Metals.**

**[Abstract]**

**V. H. Veley**

*Proceedings of the Royal Society of London*, Vol. 48, 1890 (1890), pp. 458-459

**IV. "The Conditions of Chemical Change between Nitric Acid and certain Metals." By V. H. VELEY, M.A., the University Museum, Oxford. Communicated by Professor ODLING, F.R.S. Received October 23, 1890.**

**(Abstract.)**

**This paper is in continuation of a preliminary communication on the same subject; the main points contained in it are as follows:—**

**I. The metals copper, mercury, and bismuth do not dissolve in**

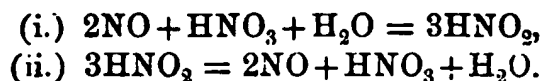
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nitric acid of about 30 per cent. concentration (the acid commonly employed for the preparation of nitric oxide gas) and heated to a temperature of 30° C., provided that nitrous acid is neither present initially nor formed subsequently. To prevent this, it is necessary in the cases of copper and bismuth to add a small quantity of some oxidising substance, such as hydrogen peroxide or potassium chlorate, or, as less efficacious, potassium permanganate, or to pass a current of air or, lastly, such a substance as urea, which destroys the nitrous acid by its interaction.

II. If the conditions are such that these metals dissolve, then the amount of metal dissolved and the amount of nitrous acid present are concomitant variables, provided that the nitric acid is in considerable excess. Change of conditions, such as concentration of acid and variation of temperature, which increase the former increase also the latter.

III. If the conditions are such that these metals dissolve, it would appear that the metallic nitrite is at first formed, together with nitric oxide; the former is decomposed by the excess of nitric acid to liberate nitrous acid, while the latter reduces the nitric acid to form a further quantity of nitrous acid.

Eventually the net result is the product of two reverse chemical changes represented by the equations—



The nitrous acid is thus destroyed as fast as it is generated.

IV. If the conditions are such that metals dissolve in nitric acid, then nitrous acid is invariably the initial product of reduction.

V. The metals copper, mercury, and bismuth dissolve very readily in a 1 per cent. solution of nitrous acid; under these conditions nitric acid present in slight excess interferes with, rather than promotes, the chemical change. This result is probably due to the greater stability of nitrous acid in the presence of nitric acid.

VI. Hydrogen gas reduces nitric to nitrous acid in presence of cupric or lead nitrate; it also converts mercuric into mercurous nitrate, but does not produce any change in solutions of bismuth and zinc nitrates dissolved in nitric acid.